RST TASKING ASSIGNMENT RECORD

TDD TYPE: Assessment

DATE: 07/21/15

START/COMPLETION DATE:
Assessment preparation Start Date: 07/22/15
Expected Completion Date: 08/31/15

TDD #:

TASK MONITORS: Eric M. Daly

SITE CODE: A23Q **CERCLIS CODE: NYN000206698**

EPA SITE/PROJECT NAME: Holy Trinity Cemetery Radiological Site

ADDRESS: 5401 Robert Street

CITY/STATE: Lewiston, NY 14092
COUNTY: Niagara Falls;
BLOCK: **LOT:___ __ _____**

ESTIMATE OF HOURS NEEDED: Approximately 300 hours

DESCRIPTION OF WORK:

- **Background**
    - In a 1978 U.S. Department of Energy (U.S. DOE) aerial radiological survey, more than 15 properties throughout the region were identified as having elevated levels of radiation above background. It is believed that, in the early 1960s, slag from the local Union Carbide facility was used as fill on the properties prior to paving. The slag contained sufficient quantities of uranium and thorium to be classified as a licensable radioactive source material. Union Carbide subsequently obtained a license from the Atomic Energy Commission (now the Nuclear Regulatory Commission) and the State of New York; however, the slag had been used as fill throughout the Niagara Falls region prior to licensing. Based on the original survey and subsequent investigations, it is believed that the radioactive Union Carbide slag was deposited at the Holy Trinity Cemetery property.
    - For detailed Site History, please refer to bottom of TDD.

- In accordance with the Assessment Activities Section in the SOW, RST 2 shall provide removal site assessment support and perform the following activities:
    - Provide **4 Technicians** to work with Site OSC in the planning and field phases of this assessment. This will include property ownership research, creation of the Quality Assurance Project Plan (QAPP)/Health & Safety Plan, site visits, radiological field survey, radon sampling and survey, map productions and attending technical meetings. Start date is **07/22/15. Tentative Site Mobilization date is 08/10/15.**
    - **1 Radon Specialist** to support the field aspect of the radiological assessment; specifically identifying the radon canister placement, placing the canisters, picking up the canisters and delivering to the laboratory for analysis. **Tentative date of mobilization is 08/10/15 for canister drop off and 08/13/15 for pick up.**

- **Tasks include:**
    - Assist in a ground radiological survey (Support EPA with gamma radiological survey utilizing the Fluke Pressurized Ionization Chamber **(Supplied by EPA)** and the Ludlum 2241 **(Supplied by EPA).**
    - Perform Rad7 survey (Radon/Thoron). **Weston will need to rent two Rad7 units.**
    - Perform survey with the Reuter Stokes131 PIC (RSS-131 PIC). **Weston will need to rent one Reuter Stokes 131 PIC Unit.**
    - Obtain radon charcoal canisters and transport to analytical laboratory. Exact amount of radon canisters will need to be determined after site visit.
    - Soil sampling boring and laboratory analysis based on Pre-Remedial QAPP for this Site.
    - Maintain site log.
    - Photo-document site operations.
    - Prepare health and safety plan **(Draft due 7 days from TDD approval).**
    - Prepare site maps with designated survey points identified as well as sensitive areas **(due 7 days after completion of the assessment).**
    - Document on-site activities.
    - Provide draft Assessment Report including all sampling results, survey results and observations 30 calendar days after completion of the assessment
    - Travel and Overtime is authorized.

- **Detailed Site History:**

The Holy Trinity Cemetery site (EPA ID No. NYN000206698), hereinafter referred to as "the HTC site" or "the site", consists of an area of radionuclide contamination located at a cemetery of approximately 31.5 acres in Lewiston, New York. The area of observed contamination is 2.91 acres; the property is owned by Holy Trinity Cemetery. The area of observed contamination is located in the northernmost portion of the property on a relatively

flat and slightly elevated grassy field, as well as on existing roadbeds. There is one building on site, which is utilized both as a residence and cemetery maintenance facility. The HTC site is bordered: to the north and east by Interstate 190; to the south by another cemetery; and to the west by Robert Avenue and a residential area.

In a 1978 U.S. Department of Energy aerial radiological survey, more than 15 properties throughout the region were identified as having elevated levels of radiation above background. It is believed that, in the early 1960s, slag from the local Union Carbide facility was used as fill on the properties prior to paving. The slag contained sufficient quantities of uranium and thorium to be classified as a licensable radioactive source material. Union Carbide subsequently obtained a license from the Atomic Energy Commission (now the Nuclear Regulatory Commission) and the State of New York; however, the slag had been used as fill throughout the Niagara Falls region prior to licensing. Based on the original survey and subsequent investigations, it is believed that the radioactive Union Carbide slag was deposited at the Holy Trinity Cemetery property.

In February 1980, the New York State Department of Health Bureau of Radiological Health and the Niagara County Health Department conducted a radiological survey of the HTC site to identify areas of elevated radioactivity as a result of radioactive slag having been used on the property for fill. The survey was conducted based on information that the slag used at the cemetery was from the same source used at two other locations in nearby Niagara Falls, which had been identified by the NYSDOH as containing elevated levels of radioactivity. During the survey, cemetery personnel showed NYSDOH a slag pile located near the caretaker's garage in the western portion of the property. Cemetery personnel stated that this slag was used as fill for the cemetery roads throughout the property.

Additionally, the slag was used as fill for the base of two proposed roadbeds that extended approximately 500 to 600 feet from the caretaker's garage northwest toward Robert Avenue. At the time of the survey, the construction of these roads had been abandoned. The underlying slag base was covered with an unknown amount of soil and was left as an open field. Using an Eberline PRM 7 radiation meter, radioactivity of the slag pile was measured at 250 μR/hr; readings along cemetery roads ranged from 5 μR/hr (i.e., background concentration) to 30 μR/hr. Readings along the abandoned roadbeds ranged from 200 μR/hr to 400 μR/hr. Samples of the slag were collected as part of the investigation; laboratory analyses of the samples indicated detectable concentrations of potassium-40, uranium-235 and -238, radium-226, thorium-232, and one other isotope.

In October 2006, the New York State Department of Environmental Conservation and the Niagara County Health Department conducted a site visit at HTC. At that time, the slag pile that previously had been observed near the caretaker's garage was no longer on site; the current caretaker had neither knowledge of the slag pile, nor what happened to it. The caretaker also indicated that children living nearby use this area for recreation. Since the 1980 NYSDOH site investigation, trees had grown through the abandoned slag roadbeds, pushing the slag to the surface. As part of the site visit, NYSDEC conducted a radioactivity survey with an Exploranium GR-135. Readings taken while walking along the roadbed indicated levels of 200–450 μR/hr at waist height and a surface contact reading of 450–570 μR/hr; a contact reading of 700 μR/hr at exposed slag near a tree was documented. NYSDEC collected four samples of the slag; the samples were analyzed for isotopic uranium and isotopic thorium, and underwent gamma-ray spectroscopy analysis. Laboratory analytical results indicated the presence of uranium-238/234 ranging from 114 to 1,664 pCi/g and thorium-232 ranging from 114 to 898 pCi/g.

In May 2007, NYSDEC visited the site to identify contamination in an on-site debris pile using gamma-ray spectroscopy. A 5-minute static reading was taken; radium-226 was the only nuclide identified. An additional similar analysis was conducted on one of the roadbeds, confirming the presence of thorium-232.

During a reconnaissance performed by the NYSDOH and NYSDEC in July 2013, screening activities showed radiation levels at the HTC site along the roadway and along the back roadway leading to offsite with radiation levels up to 51 μR/hr in the roadway with the pressurized ion chamber (PIC) and up to 50,000 cpm with the sodium iodide (NaI) 2x2 detector.

On December 12 and 13, 2013, WESTON personnel collected a total of 14 subsurface soil samples and three slag samples from the HTC property. Soil samples were also collected from two locations suspected to be outside the influence of the area of observed contamination to document background conditions. At each sample location, soil samples were collected directly beneath slag material; at locations where a radioactive layer was not visually observed to be present, the soil sample was collected at the equivalent depth interval. The slag samples each consisted of one single piece of slag.

The soil samples were analyzed by TestAmerica Laboratories for TAL metals analysis; isotopic thorium, isotopic uranium, radium-226, and radium-228 by alpha spectroscopy; and radioisotopes by gamma spectroscopy. The slag samples were analyzed for the same parameters, with the exception of TAL metals analysis. One soil sample for TAL metals analysis was designated as a MS/MSD sample for QA/QC purposes. One rinsate blank was collected to demonstrate adequate decontamination of non-dedicated sampling equipment (e.g., cutting shoe). Analytical results indicate concentrations of radionuclides found in all slag samples and seven soil samples (including the field duplicate) to be significantly higher than at background conditions.

On May 1, 2014, WESTON personnel collected radon and thoron concentration measurements from locations on and in the vicinity of the HTC site. At the selected locations in background areas, above the source material, and off the source area, radon and thoron concentration measurements in pCi/L were collected with RAD7 radon detectors. The radon and thoron measurements were collected at heights of one meter above the ground surface. The measurements included uncertainty values, which were taken into account to calculate adjusted concentrations for evaluation of observed release in the air migration pathway. There were no radon or thoron concentrations that exceeded the site-specific background, nor were there any adjusted concentrations that equaled or exceeded a value two standard deviations above the mean site-specific background concentration for that radionuclide in that type of sample (i.e., there is no evidence of an observed release to air from site sources).

Based on the Pre-Remedial Evaluation, a recommendation of **NO FURTHER REMEDIAL ACTION PLANNED (NFRAP)** is given for the Holy Trinity Radiological Site.

On June 16, 2015, OSC Perera was assigned as the lead on-scene coordinator for Holy Trinity Radiological Site Removal Action. OSC Daly will be the lead for the assessment.